

Remarks

Claims 1-10, 12-31, and 33-87 are in the application. Claims 1, 18, 38, 40, 59, 64, 76, 78, 85 are in independent form. Reconsideration is requested.

The Examiner proposed that the specification include a section heading designated "Background of the Invention." Applicants have amended the specification to include section headings designating "Background of the Invention" and "Summary of the Invention."

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) as lacking reference number 501 in lines 6, 8, 15 and 23 on the application page 44. Applicants submit two copies of corrected Fig. 5, one highlighting the added reference numeral and the other in formal form. In addition, paragraph [00107] has been amended to introduce the reference numeral 501. Applicants request that the objection be withdrawn.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because the reference numerals indicated in the following drawings are not mentioned in the specification:

The reference signs 102, 104, 106, 108, 110, 122 and 124 in Fig. 1.

The reference sign 504 in Fig. 5.

The reference sign 812 in Fig. 8B.

The reference sign 830 in Fig. 8D.

The reference sign 901 in Fig. 9A.

Figs. 1, 5, 8B, and 8D have been amended to delete the cited reference numerals, and the specification has been amended at paragraph [0073] to add the reference numeral indicated for Fig. 9A. Applicants enclose a copy of each original Figs. 1, 5, 8B, and 8D showing the changes in red manuscript, and replacement formal Figs. 1, 5, 8B, and 8D. Applicants request that the objection be withdrawn.

Claims 15, 20, 65 and 79 are objected to because of informalities. Claim 15 is objected to as improperly reciting "an output engine," in view of it having

been recited in parent claim 1. This informality has been corrected by deleting reference to the output engine in claim 1. Claim 20 is objected to because "wireless communication" is deemed inconsistent with method step of "the uploading of the one or more device dependent components." Claim 20 has been amended to recite that the uploading of device dependent components "employs" wireless communication. As suggested by the Examiner, claim 65 is amended to substitute "the search" by --the searching--, and claim 79 is amended to substitute "claim 78in" by --claim 78 in--. Applicants request that the objections to the claims be withdrawn.

Claims 12 and 33 are rejected under 35 U.S.C. 112, first paragraph, for lack of enablement. Claims 12 and 33 have been cancelled

Claims 11-16 and 31 are rejected under 35 U.S.C. 112, second paragraph, for indefiniteness. Claim 11 has been cancelled, and its dependent claims have been amended to depend from claim 1. In claim 31 "the information" in line 1 is deemed to lack sufficient antecedent basis. Claim 31 is amended to depend from claim 30, which provides antecedent basis for "the information." Applicants request, therefore, that this rejection be withdrawn.

Claims 40, 46-52, 54-58, 64, 69-72, 74, 75, 78, 80 and 82-84 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al. [US 6,421,748 B 1; hereinafter Lin]. The remaining claims are rejected under 35 U.S.C. 103(a) for obviousness over Lin et al. in view of other references that include one or more of Konishi [US 6,046,820 A], Takahashi [US 6,246,486 B 1], Snipp [US 5,699,495 A], Ito [US 6,529,522 B1]. Applicants respond as follows.

Each of independent claims 1, 18, 38, 40, 59, 64, 76, 78, 85 has been amended to recite an output controller device that, in the language of claim 1, is in local association with the output device. The output controller is illustrated in Figs. 4A-4F and generally described in application paragraphs [0022]-[0024] (pages 8-9):

[0022] The output manager in the information apparatus may be capable of communicating with, managing and synchronizing data or

software components with an output device equipped with an output controller of present invention. Examples of output devices include, without limitation, printers, fax machines, copiers, image or video display devices, monitors, display screens, projectors, and audio output devices.

[0023] The output controller may be a circuit board, card or software components residing in an output device. Alternatively, the output controller may be connected externally to an output device as an external component or "box." The output controller may be implemented with one or a combination of embedded processor, software, firmware, ASIC, DSP, FPGA, system on a chip, special chipsets, among others. In another embodiment, the functionality of the output controller may be provided by application software running on a PC, workstation or server connected externally to an output device.

[0024] The output controller may include a processing unit, memory/storage unit and communication adapter unit, among others. The storage or memory unit of the output controller may store device drivers, software components or objects encapsulating device dependent data, algorithms, and code.

As described in more detail with reference to paragraphs [0044] and [0045] (pages 13-14), information apparatus 100 includes an output manager 308 (Figs. 3A-3C) that is typically implemented in software. Output manager 308 manages and coordinates wired or wireless communication between information apparatus 100 and one or more output controllers 120. Any necessary software components, data, or any other device dependent information or parameters are uploaded from the output controller 120 to the host information apparatus 100. As a result, the user can output digital content pervasively to that output controller 120 or its associated output device 140 to enable pervasive output. (Application page 15, second and third bullets) As further described beginning at paragraph [0046] (page 160), the output controller 120 may be connected to or integrated with an output device 140 and may be implemented as hardware or as software running on hardware.

Amended claim 1 recites a method of rendering at a local output device data content that is local to and accessible from an information apparatus. The method includes establishing a channel of communication directly between the information apparatus and an output controller device that is in local association

with the output device. The direct communication is described in the application as wired or wireless communication between the output controller and the information apparatus.

The output controller device is in local association with the output device as, for example, being incorporated within the output device (e.g., Figs. 4B, 4C) or connected to it (e.g., Fig. 4A), as distinct from having a mere a network connection for which there would be no proximate location of the output controller device and the output device. The proximate location of the output controller device and the output device information apparatus in local association with each other facilitates secure confident pervasive printing with devices such as a mobile computing device, a pervasive device, and a digital camera (claim 3). Remaining independent claims 18, 38, 40, 59, 64, 76, 78, 85 recite analogous aspects of an output controller device, and their dependent claims have been amended for consistency.

Applicants submit that independent claims 1, 18, 38, 40, 59, 64, 76, 78, 85 are patentably distinct from the cited references for the following reasons.

Lin et al. (US Pat. No. 6,421,748) is directed to a universal output driver to facilitate outputting a document at a remote host over a network from a local host. (Lin et al., col. 2, lines 55-58.) The universal output driver simulates the actions of a selected output device driver. The quality and size of the document output are optimized according to the properties of the selected output device driver and supported resources before it is sent to the selected remote output device. When the document output data is sent to the remote site, it is restored and converted to a format acceptable by the selected output device driver for outputting a document of desired format and quality. (Lin et al., col. 1, lines 51-67.)

Konishi (US Pat. No. 6,046,820) describes a printer that sends a calibration request to a computer upon sensing the need for calibration. The printer includes a printer controller:

The printer controller 21 receives print data sent from the computer 1, converts the print data to bitmap data and supplies the bitmap data to the printer engine 22, where the image is formed on the recording medium (e.g. recording paper). Further, the printer controller 21 senses an environmental change (e.g. a change in temperature) and consumption of components (e.g. a decline in amount of remaining toner), and issues a calibration request to the computer 1 if a fluctuation in the sensed value is large enough to require calibration. On the basis of grayscale correction data (logical density values) supplied by the computer 1 in response to the calibration request, the printer controller 21 forms a sample image and sends the computer 1 the result (actual density values) of measuring the density of the sample image. (Konishi, col. 3, lines 41-55.)

Snipp (US Pat. No. 5,699,495) describes a distributed (i.e., network) system having printers, workstations and print servers. The print servers are each responsible for servicing printer requests to a group of printers that are connected to the printer server. In accordance with this method, key printer resources are stored on each print server. The key print resources include printer drivers for the group of printers connected to the print server. The key printer resources at a selected print server are accessed by a workstation when seeking to print a document on one of the printers of the server's group. The accessed key printer resources are then used to print the document on the chosen printer. (Snipp, col. 1, lines 28-43.) The system allows a user to print a document on a remote network printer simply by selecting a printer from a list of print devices that are available to print the document (i.e., "point and print"). (Snipp, col. 2, lines 44-49.)

Applicants believe the remaining cited references are of less relevance.

Applicants submit that claim 1, and the remaining independent claims 18, 38, 40, 59, 64, 76, 78, 85, are patentably distinct from the cited references. None of the references teaches or suggests the rendering of local output device data content that is local to and accessible from an information apparatus, or establishing a channel of communication directly between the information apparatus and an output controller device that is in local association with the output device.

Lin et al. is directed to a universal print driver that essentially compresses print data for remote transmission, and the reconstitutes it after the transmission. As such, Lin et al. is directed to remote network transmission in an efficient manner that is distinct from the localized system of rendering data from an information apparatus, as recited in the claims. Likewise, the centralized network print server of Snipp conveniently centralizes drivers and separates them from their associated output devices. In addition to lacking the direct local communication recited in the claims, the centralized print server of Snipp would lead on away from direct local communication between an information apparatus and an output device.

Konishi is directed to a print controller that monitors printer performance and issues a calibration request if a fluctuation sensed. There is no teaching or suggestion that the calibration monitoring print controller of Konishi would perform any of the direct local communication of the output controller recited in the claims. Other than the term "controller," Konishi bears little relation to the claimed subject matter.

Accordingly, applicants submit that the cited references provide no teaching or suggestion of the subject matter of the amended independent claims 1, 18, 38, 40, 59, 64, 76, 78, and 85. Applicants request, therefore, that the rejections be withdrawn.

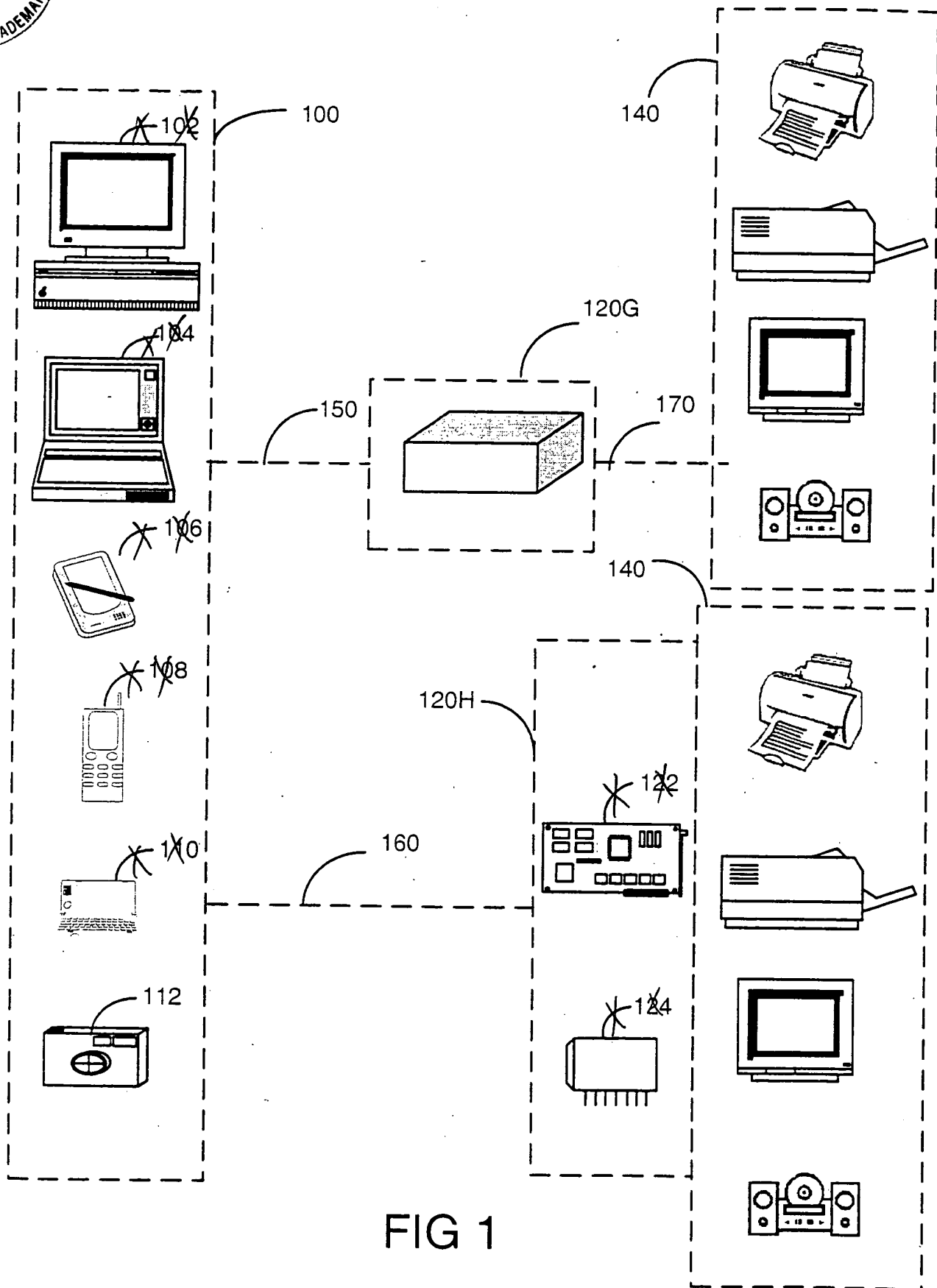
Applicants believe the application is in condition for allowance and respectfully request the same.

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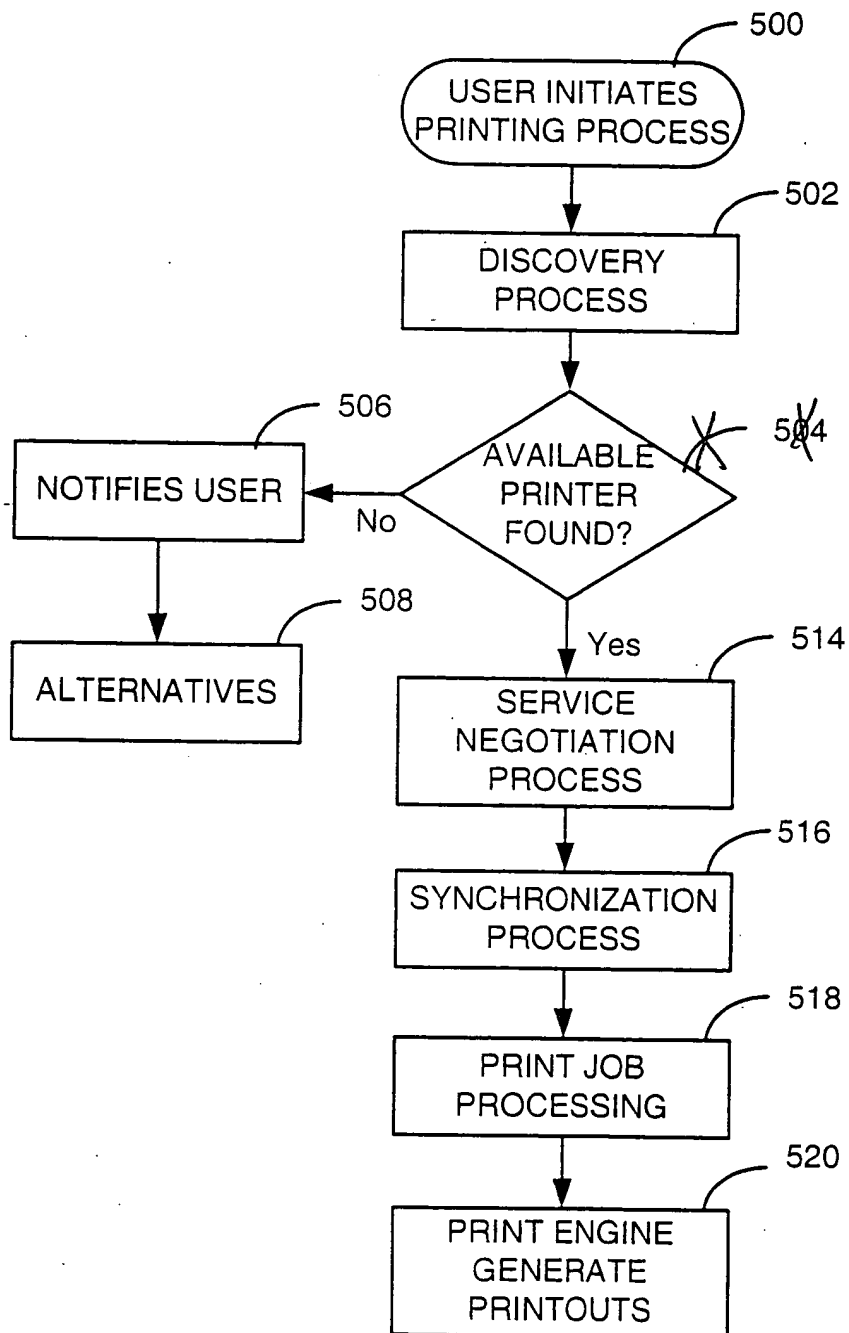


Fig. 5

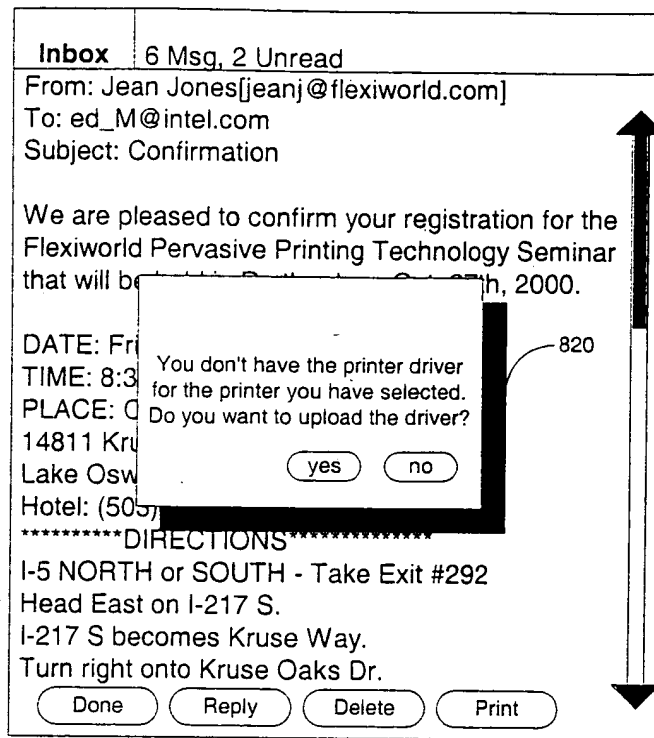


Fig. 8C

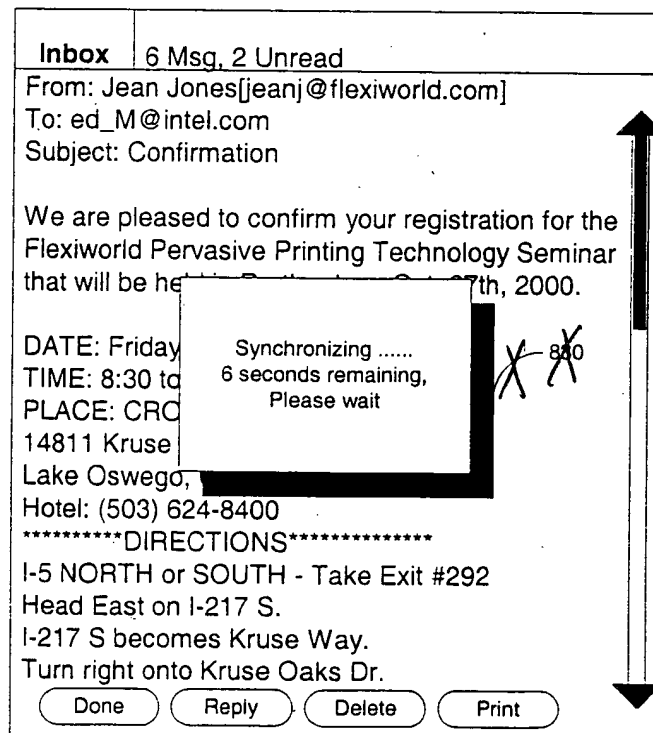


Fig. 8D

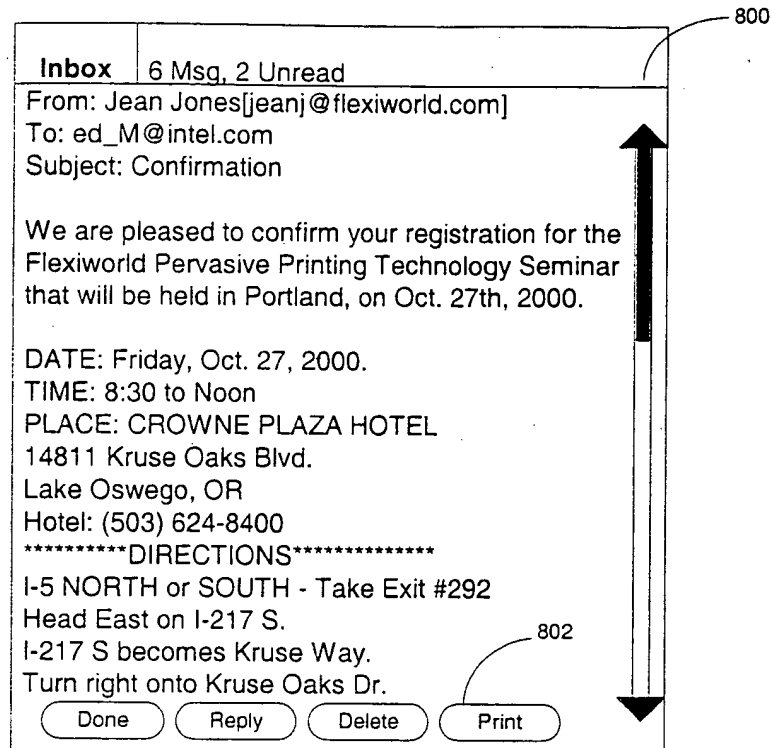


Fig. 8A

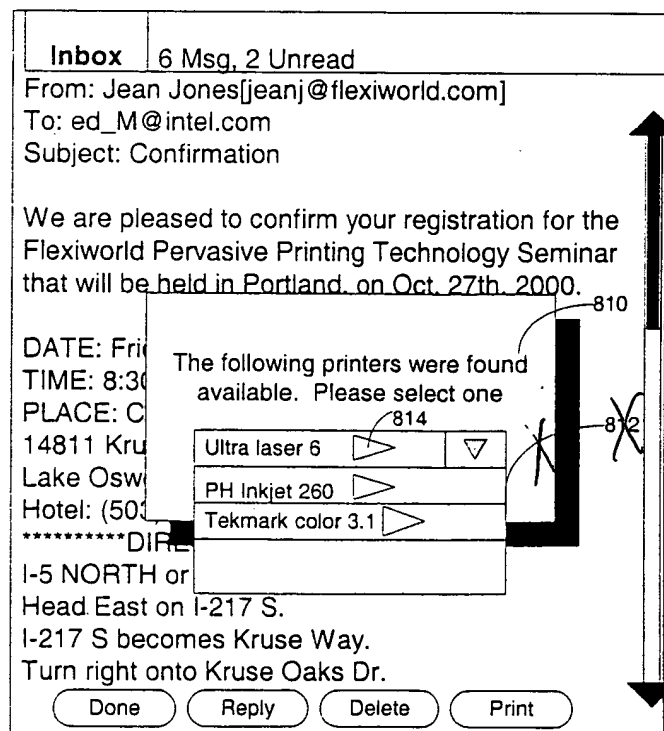


Fig. 8B